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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,750	02/06/2001	Armer J. Willenbring	1888-174	4253

7590 09/25/2003
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EXAMINER

GORDON, BRIAN R

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/777,750	WILLENBRING ET AL.	
	Examiner	Art Unit	
	Brian R. Gordon	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-35 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 10-13 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 15 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 15 recites the limitation "the scoopers and rams" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-9 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lewis et al. US 6,555,062.

Lewis et al. disclose an analyzer for performing automated assay testing. The analyzer includes a storage and conveyor system for conveying cuvettes to an incubation or processing conveyor, a storage and selection system for test sample containers, a storage and selection system for reagent containers, sample and reagent

aspirating and dispensing probes, a separation system for separating bound from unbound tracer or labeled reagent, a detection system and data collection/processing system. AU of the sub-units of the machine are controlled by a central processing unit **(means for controlling)** to coordinate the activity of all of the subunits of the analyzer. The analyzer is specifically suited for performing heterogeneous binding assay protocols, particularly immunoassays.

The device comprises a cuvette feed and orientation mechanism as described herein.

Cuvette sensors, generally indicated by the reference numeral 43, are positioned at the end of the preheat section 38 and at the beginning of the incubation section 39 to monitor the presence of cuvettes at these locations.

Referring to FIGS. 24-31, the cuvette feed and orientation mechanism 22 comprises a **hopper** which is generally indicated by the reference numeral 87, a feed conveyor which is generally indicated by the reference numeral 86, and an orientation chute which is generally indicated by the reference numeral 131. The hopper 87 is preferably made of an optically clear plastic material. This makes it easier for the operator to determine when the level of cuvettes in the hopper is low whereby the hopper requires additional cuvettes. In addition, the elements which are below the hopper, see FIG. 30 are visible.

Referring particularly to FIGS. 25, 26 and 30, the left side wall of the hopper has a vertical opening 88 and a pair of spaced outer flanges 89 which extend outwardly from

the left side wall of the hopper on opposite sides of the opening 88, as shown most clearly in FIG. 25. An upper horizontal flange 83 extends outwardly from the left and rear side walls of the hopper. The forwardmost flange 89 has an opening 84 just below the top flange 83, as shown in FIG. 25. Referring also to FIG. 25, a pair of elongated reinforcing plates 82 are fastened to the outer surfaces of the outer flanges 89 by bolts 91. The bolts 91 are also utilized to fasten the hopper 87 to a pair of chain guide plates 90 which are mounted to a hopper feeder support 92 which is, in turn, mounted on a base plate 93 by means of bolts 95. The **chain guide plates 90** are separated by a plurality of tubular spacers 97 through which the bolts 91 extend. A support bracket 94 is also mounted on the base plate 93 and is fastened to the side of the hopper feeder support 92 as shown in FIG. 24. A support bar 96 is also mounted to the outside of the rear most plate 90 by the bolts 91. A ball slide assembly 110 is mounted to the support bar 96. A mixing bar mounting plate 111 is mounted to the ball slide assembly 110. An endless conveyor chain 98 (**elevator chain – transporting means**) is located at the vertical side opening 88 and extends around a lower idler sprockets 101 and an upper drive sprocket 100. The sockets 100 and 101 are mounted on bushings 102 and are rotatively mounted on the hopper feeder support 92. The upper drive sprocket 100 is driven by a stepper motor 103 which is mounted on the support 92. One section of the conveyor chain 98 is guided along grooves in the outer longitudinal edges of the guide plate 90 and is located between the inner surfaces of the flanges 89 which define the opening 88. A plurality of spaced bars 99 (**scoopers**) are located on the outside of the conveyor chain 98 and slant downwardly and forwardly toward the event conveyor. The

chain 98 travels upwardly from the bottom of the hopper 87 at an angle from the vertical. An **idler sprocket shaft 112** extends through the bushing 102 and rotates with the **idler sprocket 101**, see FIGS. 26 and 27. The forward end of the shaft 112 is fixed to a cam wheel 113 so that the cam wheel 113 rotates with the idler sprocket 101 by means of a clamp 114. A lever arm 115 is pivotally mounted on a shaft 116 which is mounted in an adjusting fixture 117 which is located at a notch 118 in the left hand edge of the hopper feed support 92. The pivoted end of the lever arm 115 has a flanged bearing 122 which enables the lever to pivot freely on the shaft 116. The opposite end of the lever arm 115 has a slot 121 which receives a pin 120 of a mixing block 109. The mixing block 109 is fixed to the mixing block mounting plate 111 and has an upper surface 123 which slants downwardly from back to front at the same angle as the bars 99. The mixing block 109 is parallel with the section of the conveyor 98 which travels upwardly along the vertical opening 88 of the hopper and is located adjacent the bars 99. A ball bearing follower 119 is rotatively mounted on the lever arm 115 and rides in a cam slot, not shown, on the rear side of the cam wheel 113. As the cam wheel 113 rotates with the idler sprocket 101, the lever arm 115 oscillates about the shaft 116. The right hand end of the lever arm 115, as viewed in FIG. 24, moves up and down and in turn causes the mixing block 109 to move up and down. The timing of the upper movement of the block 109 is such that the block moves upwardly at the same rate as the upward movement of the conveyor chain 98. The cuvettes are stored in the hopper 87 in a random manner. The mixing block 109 serves two functions. The first function is to agitate the cuvettes within the hopper 87, and the second function is to assist in

guiding the cuvettes onto the bars 99, one cuvette per bar. As the cuvettes are carried upwardly by the bars 99, the ends of the cuvettes are guided by the inner surfaces of the flanges 89 to maintain the cuvettes in position on the bars 99. As each cuvette reaches the opening 84 (**interception portion of sorting and orientation mechanism**), it slides forwardly along its respective bar 99 through the opening 84, see FIGS. 25 and 27, in the forwardmost flange 89 and falls into the **orientation chute 131**.

The orientation chute 131, as viewed in FIGS. 24, 27 and 30, consists of a left hand plate 129 and a right hand plate 132 which are connected together by screws 139 and held in a spaced parallel relationship by a pair of spacer blocks 133. Each plate 132 and 129 has an upper slide surface 134 which define, therebetween, a slot 135 toward the event conveyor. The slide surfaces 134 extend at a downward angle from back to front and at a downward angle toward the slot 135. As each cuvette 40 falls through the opening 84 from the conveyor chain 98 to the orientation chute 131, the bottom end of the cuvette falls into the slot 135 and the flanges 58 are supported on the slide surfaces 134. This enables the cuvette 40 to slide down the surfaces 134 in a nearly upright orientation. The chute 131 is mounted to the hopper feeder support 92 by a chute support bracket 130. A chute end plate 136 is attached to the front edges of the plates 129 and 132 by screws 137. The plate 136 stops the downward slide of the cuvettes 40. The end plate 136 has a hole 147 for receiving a **position sensor** 148 which is mounted on a PC board 138. The PC board 138 is mounted on the plate 136 by fasteners 149. The forward end of each slide surface 134 has a flat upper surface 127

for receiving a flat spring 128 which helps to insure that the cuvette remains in the slot 135 when the cuvette strikes the end plate 136. The forward end of the slot 135 has a widened portion or access opening 141 which is slightly greater in width than the distance between the outer edges of flanges 58, see FIG. 30. The access opening 141 between the plates 129 and 132 enables the cuvette to fall between the plates into the orientation tube 140. The cuvette falls between **a pair of opposed guide surface 142 and 143** along the inwardly facing surfaces of the plates 129 and 132, respectively. The guide surface 143 has an upwardly facing jutting surface 144. The guide surface 142 has a recessed portion 145 which forms a downwardly facing undercut surface 146. The undercut surface 146 is opposed to the jutting surface 144 of the plate 132. The orientation tube 140 has a top opening 150 and a bottom opening 151 and extends from the bottom of the orientation chute 131 to the top of the preheater section 38. When the cuvette falls into the access opening 141 at the end of the orientation chute, one of the flanges 58 of the cuvette strikes the jutting surface 144. This deflects the cuvette laterally toward the recessed portion 145 of the left hand plate 129. As the cuvette shifts laterally, the opposite flange of the cuvette strikes the recessed portion 145 just below the downwardly facing undercut surface 146. This traps the flange of the cuvette below the undercut portion 146 and prevents the cuvette from accidentally flipping upside down when it reaches the end of the chute 131. The cuvette, thereafter, falls in an upright orientation along the guide surface 142 and 143 into the orientation tube 140 through the top opening 150 and through the bottom opening 151 (**escape mechanism**) into the preheater section 38. The orientation tube 140 has a helical twist

which causes the cuvette to rotate approximately 90.degree. about its vertical axis so that when the cuvette falls into the preheater section 38, the broad sides 56 of the cuvette are forward and back as well as the flanges 58

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. as applied to claims 1-9 and 14-15 above, and further in view of Rivers Jr. et al. US 6,443,291.

Lewis et al. does not specifically recite that the device comprises a hopper sensor.

Rivers Jr. et al. teach a method and apparatus for providing parts to bowl.

To provide parts 150, 250, 350 or 450 to the conduit 34, the hopper 164 is first provided with a supply of parts 150, 250, 350 or 450. Next, the vibratory bowl 12 is activated. The hopper 164 is then activated to move the parts 150, 250, 350 or 450 from the hopper 164 into the vibratory bowl 12. The micro controller 120 is preferably programmed such that the hopper 164 can only be activated when both the level sensor 26 does not sense parts 150, 250, 350 or 450 in the bowl 12 and the bowl 12 is activated. The level sensor 26 which senses the level of parts 150, 250, 350 or 450 in the bowl 12 and stops the feed of parts 150, 250, 350 or 450 from the hopper 164 into the bowl 12 when the level of parts 150, 250, 350 or 450 is too high.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Lewis et al by employing the level sensor of Rivers et al. in order to monitor the supply of vessels in the hopper.

Allowable Subject Matter

7. Claims 10-13 and 17 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 18-35 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach nor fairly suggest an apparatus for feeding to an automated analyzer a bulk quantity of vessels each having an elongated body with a first end and a second end, comprising: a frame structure having two upright side plates connected in a spaced-apart parallel relationship; means supported by said frame structure for transporting said vessels along a path, including an elevator chain driven by a drive sprocket, and a multiplicity of scoopers carried by said elevator chain and each configured to transport said vessels in an horizontal orientation; a vessel hopper attached to said frame structure for receiving said bulk quantity of vessels and supplying them to said scoopers carried by said elevator chain; a sorting and orienting mechanism, mounted on said frame structure at a location adjacent to said path and intercepting said vessels carried by said scoopers; said sorting and orienting mechanism, including a first ram for engaging said first end of said vessels carried by said scoopers if said first ends of said vessels are facing said first ram, and ejecting such vessels one at a time from said scoopers into a guide; said sorting and orienting mechanism, including a second ram for engaging said second end of said vessels carried by said scoopers if said second ends of said vessels are facing said first ram, and ejecting such vessels one at a time from said scoopers into a guide; an escape

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mechanism mounted to said frame and connected to said guide for receiving said sorted and oriented vessels and dispensing them one at a time; and means for controlling and coordinating the movement of said transporting means, said sorting and orienting mechanism, and said escape mechanism.

Conclusion


10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Juranas, Schindel, Wilson et al., Watson et al., Carey et al. (.275; .037; .349 ; and .940), and Lewis et al. (.615) disclose inventions related to hopper dispensers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is (703) 305-0399. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 703-308-4037. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

brg


Jill Warden
Supervisory Patent Examiner
Technology Center